



WYOMING LEGISLATIVE SERVICE OFFICE

Memorandum

DATE October 10, 2022

TO Select Federal Natural Resource Management Committee

FROM Emily Wangen, Legislative Editor

SUBJECT Wind and Solar Development on Federal Lands

This memorandum responds to a request from the Select Federal Natural Resource Management Committee at its July 2022 meeting to receive information regarding solar and wind development projects on federal lands in Wyoming. This memorandum provides an overview of the number of solar and wind development projects on Wyoming's federal lands, the process of securing a permit to construct solar and wind development projects on federal lands, and the revenue generated by these projects.

BACKGROUND¹

As of October 2022, three solar and wind development projects are operating or pending construction on Wyoming's federal lands that the Bureau of Land Management (BLM) manages. Project developers obtained the authority to use BLM land through a Right-of-Way (ROW) grant, which allows applicants to use public land for a project during a period that is specified in the grant. ROW projects on federal lands can extend beyond wind and solar projects and can include power generation, power lines, fiber optic lines, communications tower sites, roads, trails, canals, pipelines, and reservoirs. While other federal agencies are authorized to issue a ROW, research found that no federal agency outside the BLM has previously issued a ROW for land in Wyoming for wind and solar development.²

¹ Bureau of Land Management (BLM) website, accessed October 2022.

² Agencies surveyed in July 2022 include the U.S. Forest Service, National Parks Service, Bureau of Reclamation, Fish and Wildlife Service, and Bureau of Indian Affairs.

INFLATION REDUCTION ACT

The Inflation Reduction Act of 2022 (HR 5376) became law on August 16, 2022 (Pub. L. No. 117-169)³ and included provisions that may affect future ROWs. According to BLM Wyoming, the process of applying for a ROW is expected to stay the same. But the ultimate decision or ability to grant a ROW for solar and wind development may be impacted by Section 50265(b) of the Act (Appendix A). For ten years after the Inflation Reduction Act's enactment, the Secretary of the Department of Interior cannot issue a ROW for wind or solar energy development on federal land unless: (1) an onshore lease sale has been held within 120 days of the issuance of a ROW for wind or solar development; and (2) the sum total of acres offered for lease in onshore lease sales during the one year before issuing the ROW is not less than the lesser of 2 million acres or 50% of the acreage for which expressions of interest have been submitted for lease sales during that year.⁴

RIGHT-OF-WAY PERMITS

BUREAU OF LAND MANAGEMENT

Wind and solar energy projects are authorized to be processed as ROWs under Title V of the Federal Land Policy Management Act (FLPMA) of 1976, as amended, and Code of Federal Regulations Title 43, Part 2800. Accordingly, the BLM modified agency rules to facilitate this type of development in January 2018.⁵

The BLM, which manages approximately 18.4 million acres of public lands in Wyoming and in accordance with the FLPMA,⁶ requires a ROW when a person plans to use public lands for systems or facilities over, under, on, or through public lands.⁷ The BLM Wyoming website states that a ROW is required when a project or activity on public lands would involve “appreciable disturbance, alteration, or damage.”⁸ But the BLM specifies that a ROW is not needed for “casual use” of lands (activities that do not cause appreciable disturbance or damage to the land, resources, or improvements). “Casual use” activities include using existing routes, collecting data to prepare a ROW application, surveying, and marking routes.⁹

³ [H.R. 5376 \(Enrolled\)](#).

⁴ [Id.](#)

⁵ BLM, [Laws and Regulations](#), accessed July 2022.

⁶ BLM, [BLM Wyoming](#), accessed July 2022.

⁷ 43 U.S.C. § 1761; 43 C.F.R. § 2801.9(a).

⁸ BLM, [Rights-of-Way](#), accessed July 2022.

⁹ BLM, [Obtaining a Right-of-Way on Public Lands](#), accessed July 2022. See also 43 C.F.R. §§ 2801.5(b) & 2804.29.

APPLICATION AND APPROVAL

The steps in the ROW application process can vary depending on the agency but generally involve pre-application meetings with the agency and preparing an application. The process for applying for a ROW through the BLM is described in the Code of Federal Regulations (43 C.F.R 2804.12), including specific steps for applications for solar or wind development projects with a capacity of 100 kilovolts (kV) or more (Appendix B).¹⁰ In addition, all applicants must submit, at minimum, a completed standard application form, a plan of development, and a proposed project map.¹¹ Once an application is completed and the BLM has completed the required reviews, inventories, and reports, the applicant will be notified in writing if the application for a ROW is approved or denied.¹²

U.S. FOREST SERVICE

The U.S. Forest Service (USFS), which manages approximately 9.7 million acres of land in Wyoming,¹³ has not issued a Special-Use permit for solar and wind development projects in Wyoming but requires special-use authorization for the following uses:

- Occupation, use, or construction on NFS land for personal or business purposes, whether the duration is temporary or long-term.
- Charging a fee or deriving income from NFS land use.
- Use that involves 75 or more participants or spectators.¹⁴

An applicant first submits a proposal for a testing permit to the local forest office; the proposal would be converted to an application after the proposal is found to not conflict with the forest plan, have any health or safety issues, and have no outstanding debt to the USFS. Then, an applicant would test for two to three years to see if the resource proves viable before applying for a special-use permit.¹⁵

PROJECTS ON FEDERAL LANDS IN WYOMING

SOLAR PROJECTS

As of December 2021, the BLM has granted a ROW for one solar development project in Wyoming: the Sweetwater Solar project in Sweetwater County. In addition, the BLM lists 36 other

¹⁰ U.S. General Services Agency, [Application for Transportation and Utility Systems and Facilities on Federal Lands \(Standard Form 299\)](#), revised March 2020.

¹¹ BLM Wyoming, August 2022.

¹² BLM, [Obtaining a Right-of-Way on Public Lands](#), revised March 10, 2018.

¹³ U.S. Forest Service (USFS), [Land Areas Report Table 4 - Areas by State](#), updated Dec. 25, 2021.

¹⁴ USFS, [Special-Use Permit Application](#), accessed July 2022.

¹⁵ U.S. Forest Service Rocky Mountain Regional Office, July 2022.

solar energy ROWs on public lands in four other states (Appendix C); Arizona (5), California¹⁶ (18), New Mexico (1), and Nevada (12).

Sweetwater Solar (Operational)

The Sweetwater Solar project, cited as the state's first utility solar project, is located on 703 acres of federal land near Green River.¹⁷ A ROW was granted in July 2018 for 584 acres of BLM land with a potential generation capacity of 80 Megawatts (MW) using photovoltaic technology.¹⁸

WIND PROJECTS

As of October 2021, the BLM has granted two ROWs for wind development projects to operate on BLM land in Wyoming: the Foote Creek Rim Wind project and the Chokecherry/Sierra Madre project. Both projects are in Carbon County. In addition, the BLM lists 34 other wind energy ROWs on public lands in six other Western states (Appendix D); Arizona (2), California (27), New Mexico (1), Nevada (1), Oregon (1), and Utah (2).¹⁹

Foote Creek Rim (Operational)

The Foote Creek Rim Wind project is cited as the first utility-scale wind project in the state,²⁰ and BLM granted a ROW in July 1997 for 941 acres of BLM land.²¹ PacifiCorp acquired full project ownership in 2019 and upgraded the turbines in 2021.²² The generation capacity of the turbines for this project is 21 MW.

Chokecherry/Sierra Madre (Pending Construction)

The Chokecherry and Sierra Madre (CCSM) Wind Energy Project, broken up into two phases, was proposed in 2008 by the Power Company of Wyoming. It is a 219,707-acre development area located on a mix of private and public lands.^{23, 24} The BLM authorized a ROW for 82,593 acres of BLM land in October 2019. The estimated generation capacity of the turbines located on BLM is 1,500 MW.²⁵

¹⁶ The BLM approved a ROW application for an additional solar project in California on Jan. 13, 2022, that is not included in this total.

¹⁷ SOLV Energy, [Sweetwater Project](#), accessed July 2022.

¹⁸ BLM, [Solar Energy Rights-of-Way on Public Lands](#), Dec. 21, 2021.

¹⁹ BLM, [Wind Energy Rights-of-Way \(ROW\) on Public Lands](#), October 2021.

²⁰ PacifiCorp, [Foote Creek I](#), accessed July 2022.

²¹ BLM, [Wind Energy Rights-of-Way \(ROW\) on Public Lands](#), October 2021.

²² PacifiCorp, [Foote Creek I](#), accessed July 2022.

²³ Permitting Dashboard, [Chokecherry-Sierra Madre Wind Energy \(Phase I\)](#), accessed July 2022.

²⁴ Permitting Dashboard, [Chokecherry/Sierra Madre Wind, Phase II](#), accessed July 2022.

²⁵ BLM, [Wind Energy Rights-of-Way \(ROW\) on Public Lands](#), October 2021.

Additional Pending Projects

As of October 2022, the BLM lists five additional Wyoming wind projects as pending. These projects are being developed by Energy of Utah LLC, Jackalope Wind LLC, Lucky Start Wind LLC, Maestro Wind LLC, and Two Rivers Wind LLC. While MW and turbine data is not available for each project, the BLM estimates the projects will generate 2,701.2 MW through 490 turbines.²⁶

ROW FEES

The BLM charges different fees during the application process and throughout the ROW term, many of which are adjusted annually based on inflation indices.²⁷ In May 2022, the BLM modified rental and per-MW fee rates to promote wind and solar energy projects.²⁸

Processing and Monitoring Fees

The BLM requires solar and wind applicants to pay an application fee when submitting an application that is part of the cost recovery payment for processing the application.²⁹ For other ROW applications, the fee is determined after receipt and review of the application by the field office according to a fee schedule (Appendix F) generally based on the federal work hours involved.³⁰

Rental fees

Previously, rental fees were based on land values in the project area (categorized as “zones”), with solar energy³¹ and wind energy³² development acreage on separate schedules. For example, in Wyoming, Carbon and Sweetwater Counties were designated as Zone 2 and Zone 1, respectively.³³

The May 2022 changes to rental fees modified the formula by using a state-specific factor representing the percent difference between improved agricultural and unimproved rangeland values and decreasing the rate of return from 5.274% to 2%.³⁴ In addition, the BLM uses an encumbrance factor of 100% for solar and 10% for wind development when calculating acreage rental fees because solar projects generally preclude most other land uses due to the construction of fences around the project perimeter. In contrast, wind projects, which are typically dispersed,

²⁶ BLM, [Pending Wind Energy Development Projects](#), report generated October 10, 2022.

²⁷ [See, e.g.](#), 43 C.F.R. §§ 2805.16 & 2805.17(c).

²⁸ BLM, [MS 2806-Rent, Chapter 6: Rent and Fee Reductions for Solar and Wind Energy Development Authorizations](#), May 26, 2022.

²⁹ 43 C.F.R. § 2804.14.

³⁰ BLM Wyoming, August 2022; BLM, [Calendar Year 2022 Cost Recovery Processing and Monitoring Fee Schedule](#).

³¹ BLM, [Calendar Years 2016-2025 Solar Energy Development Acreage Rent Schedule](#).

³² BLM, [Calendar Years 2016 – 2025 Wind Energy Development Acreage Rent Schedule](#).

³³ BLM, [Solar and Wind Rent Schedule Zone Re-Assignments for Counties in Select States](#).

³⁴ BLM, [MS 2806-Rent, Chapter 6: Rent and Fee Reductions for Solar and Wind Energy Development Authorizations](#), May 26, 2022.

allow for greater land use for other purposes.³⁵ Finally, the BLM adds an annual adjustment of 2.1% each year.³⁶ Figure 1 shows the per-acre rental rate for the Wyoming projects multiplied by the acreage on BLM land.

Figure 1: Estimated Per-Acre Rental Rates for Wyoming Projects

PROJECT	2022	2023	2024	2025	2026	TOTAL
Sweetwater Solar	\$7,965.76	\$8,135.12	\$8,304.48	\$8,479.68	\$8,654.88	\$41,539.92
Foote Creek Wind	\$1,289.17	\$1,317.40	\$1,345.63	\$1,373.86	\$1,402.09	\$6,728.15
CCSM Wind	\$113,152.41	\$115,630.20	\$118,107.99	\$120,585.78	\$123,063.57	\$590,539.95
TOTAL	\$122,407.34	\$125,082.72	\$127,758.10	\$130,439.32	\$133,120.54	\$638,808.02

Other Costs

In addition to the previous fees, solar and wind development projects are also charged a per-megawatt rate fee (MW fee). Previously, the fee was based on the technology used in the project but is now \$2,000 for all technologies. The MW fee is phased over three years once the project is commercially operating and adds to the per-acre rental fees.³⁷ Figure 2 shows the MW fees for each Wyoming project during the three-year phase-in process multiplied by the project's MW capacity.

Figure 2: Estimated MW Rates for Wyoming Projects

PROJECT	Year 1	Year 2	Year 3+	TOTAL
Sweetwater Solar	\$40,000.00	\$80,000.00	\$160,000.00	\$280,000.00
Foote Creek Wind	\$10,500.00	\$21,000.00	\$42,000.00	\$73,500.00
CCSM Wind	\$750,000.00	\$1,500,000.00	\$3,000,000.00	\$5,250,000.00
TOTAL	\$800,500.00	\$1,601,000.00	\$3,202,000.00	\$5,603,500.00

Revenue

In fiscal year 2020, wind and Solar development on Wyoming's³⁸ BLM lands ranked fourth out of the seven states/state groups that generated revenue through geothermal, solar, and wind development. Each state's total is listed below:³⁹

1. California (\$2.7 billion)

³⁵ BLM Wyoming, August 2022

³⁶ BLM, **MS 2806-Rent, Chapter 6: Rent and Fee Reductions for Solar and Wind Energy Development Authorizations**, May 26, 2022.

³⁷ BLM Wyoming, August 2022.

³⁸ Economic output data for Wyoming includes Nebraska, which does not have any renewable energy development projects on BLM land.

³⁹ BLM, **The BLM: A Sound Investment for America 2021**, November 2021.

2. Arizona (\$1.8 billion)
3. Nevada (\$563.4 million)
- 4. Wyoming (\$102.6 million)**
5. Utah (\$34.6 million)
6. New Mexico, Kansas, Oklahoma, and Texas (\$6.0 million)
7. Oregon and Washington (\$0.6 million)

Although there is a state-specific factor that is applied to wind and solar ROW rents and fees, research revealed no federal statute or regulation that requires that rents or fees from wind and solar development projects be remitted to the states or counties.⁴⁰

MITIGATION AND RECLAMATION

The BLM develops mitigation requirements on a case-by-case basis during the permit review process based on the specifics of the project and the site.⁴¹ Additionally, the BLM generally requires a bond to mitigate performance- and reclamation-related risk. ROW bonding requirements for rights-of-way are described in 43 C.F.R. 2805.20 (Appendix E). Federal regulation does not appear to require a minimum bond amount or set a maximum amount, but regulation does authorize the BLM to (1) determine the amount based on a reclamation cost estimate that the applicant must prepare and an estimate of the BLM's cost to administer a reclamation contract; and (2) to periodically review bonds for adequacy and to increase or decrease bond amounts.⁴² Further, if a state regulatory authority requires a bond, regulation requires that the BLM be listed as an additionally named insured on that bond.⁴³ The BLM has also issued an instruction memorandum on ROW bonding that requires a bond for ROW grants that are likely to incur reclamation or maintenance costs. This policy includes exceptions to federal, state, and county government uses; federally administered or federally funded public utility projects; oil and gas leases and solar/wind and geothermal energy leases covered by other policies; and uses with an estimated total reclamation cost below \$2,000.00.⁴⁴

OIL AND GAS

A leaseholder, operator, or designated agent who identifies an oil and gas deposit on federal land can apply for a permit to drill (APD). Once an application is submitted, the BLM will typically complete an inspection with surface/mineral estate owners, resource specialists, the operator, and other agencies, if applicable. After the inspections, the BLM, and any other applicable federal agencies, will conduct a NEPA (National Environmental Policy Act) analysis (either an

⁴⁰ BLM Wyoming, August 2022.

⁴¹ Id.

⁴² 43 C.F.R. § 2805.20(a)(intro) and (3).

⁴³ 43 C.F.R. § 2805.20(a)(1).

⁴⁴ BLM, **National Policy for Rights-of-Way Bonding**, November 15, 2018.

environmental impact statement or an environmental assessment) before deciding on the APD. Approved APDs are valid for up to two years, with the possibility of a two-year extension.⁴⁵

Please reach out if there are any questions or requests for additional information.

⁴⁵ BLM, [Applications for Permits to Drill](#), accessed July 2022.